

J. Anderson

Re-run



RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/744,167

DATE: 09/20/2002

TIME: 14:09:24

Input Set : N:\paola\US09744167.raw

Output Set: N:\CRF3\09202002\I744167.raw

1 <110> APPLICANT: HSC Research and Development Limited Partnership
2 <120> TITLE OF INVENTION: SARA PROTEINS
3 <130> FILE REFERENCE: 3206-172/PAR
4 <140> CURRENT APPLICATION NUMBER: US/09/744,167
5 <141> CURRENT FILING DATE: 1999-07-20
6 <150> PRIOR APPLICATION NUMBER: 2,237,701
7 <151> PRIOR FILING DATE: 1998-07-20
8 <160> NUMBER OF SEQ ID NOS: 8
9 <170> SOFTWARE: PatentIn Ver. 2.1
11 <210> SEQ ID NO: 1
12 <211> LENGTH: 4839
13 <212> TYPE: DNA
14 <213> ORGANISM: Homo sapiens
15 <400> SEQUENCE: 1

ENTERED

```
16 gcataactgaa tcagcaggac tggctggtgg tgcagcagac atcatgagta agcaccgaga 60
17 agtctgttcc ttatcacgtg tgtaaggagg aaaagggtta aacaagtctc ttaagtgggtg 120
18 tttcctcacc gatggagaat tacttccaag cagaagctta caacctggga caagggtgta 180
19 gatgaatttg aacaaaacga agatgaaaca gtttcttcta ctttattgga tacaaagtgg 240
20 aataagattc tagatcccc ttctcaccgg ctgtcattta accctacttt ggccagtgtg 300
21 aatgaatctg cagtttctaa tgagtcacaa ccacaactga aagtcttctc cctgggtcat 360
22 tcagctcccc tgaccacaga ggaagaggat cactgtgcta atggacagga ctgtaatacta 420
23 aatccagaga ttgccacaat gtggattgat gaaaatgctg ttgcagaaga ccagttaatt 480
24 aagagaaact atagttagga tgatcaatgc agtgctgttg aagtgggaga gaagaaatgt 540
25 ggaaacctgg cttgtctgcc agatgagaag aatgttcttg ttgtagccgt catgcataac 600
26 tgtgataaaa ggacattaca aaacgattta caggattgta ataattataa tagtcaatcc 660
27 cttatggatg ctttttagctg ttcactggat aatgaaaaca gacaaactga tcaatttagt 720
28 tttagtataa atgagtccac tgaaaaagat atgaattcag agaaacaaat ggatccattg 780
29 aatagaccga aaacagaggg gagatctgtt aaccatctgt gtcctacttc atctgatagt 840
30 ctagccagtg tctgttcccc ttcacaatta aaggatgacg gaagtatagg tagagacccc 900
31 tccatgtctg cgattacaag tttaacggtt gattcagtaa tctcatccca gggaacagat 960
32 ggatgtcctg ctgttaaaaa gcaagagAAC tatataccag atgaggacct cactggcaaa 1020
33 atcagctctc ctaggacaga tctaggaggat ccaaattcct tttcccacat gactgagggg 1080
34 attttgatga aaaaagagcc agcagaggag agcaccactg aagaatccct ccggtctggt 1140
35 ttacctttgc ttctcaaacc agacatgcct aatgggtctg gaaggaataa tgactgtgaa 1200
36 cgggtgttcag attgccttgt gcctaataa gttagggctg atgaaaatga aggttatgaa 1260
37 catgaagaaa ctcttggcac tacagaattc cttaatatga cagagcattt ctctgaatct 1320
38 caggacatga ctaattggaa gttgactaaa ctaaatagaga tgaatgatag ccaagtaaAC 1380
39 gaagaaaagg aaaagtttct acagattagt cagcctgagg aactaatgg tgatagtgga 1440
40 ggacagtgtg ttggattggc agatgcaggc ctagatttaa aaggaaactg cattagttaa 1500
41 agtgaagaat gtgatttctc cactgttata gacacaccag cagcaaatta tctatctaAC 1560
42 ggttgtgatt cctatggaat gcaagaccca ggtgtttctt ttgttccaaa gactttaccc 1620
43 tccaaagaag attcagtaac agaagaaaaa gaaatagagg aaagcaagtc agaatgctac 1680
44 tcaaataatt atgaacagag aggaaatgag gccacagaag ggagtggact acttttaaAC 1740
```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/744,167

DATE: 09/20/2002
 TIME: 14:09:24

Input Set : N:\paola\US09744167.raw
 Output Set: N:\CRF3\09202002\I744167.raw

45	agcactggtg	acctaatagaa	gaaaaattat	ttacataaatt	tctgtagtca	agttccatca	1800
46	gtgcttgggc	aatcttcccc	caaggtagta	gcaagcctgc	catctatcag	tgttcctttt	1860
47	ggtggtgcaa	gacccaagca	accttctaata	cttaaaacttc	aaattccaaa	gccattatca	1920
48	gaccattttac	aaaatgactt	tcctgcaaac	agtggaaata	atactaaaaa	taaaaatgat	1980
49	attcttggga	aagcaaaatt	aggggaaaac	tcagcaacca	atgtatgcag	tccatctttg	2040
50	ggaaacatct	ctaatagtcg	tacaaatggg	gaacatttag	aaagttatga	ggctgagatc	2100
51	tccactagac	catgccttgc	attagctcca	gatagcccag	ataatgatct	cagagctggg	2160
52	cagtttggaa	tttctgccag	aaagccattc	accacgctgg	gtgaggtggc	tccagtatgg	2220
53	gtaccggatt	ctcaggtctc	aaattgcatg	aaatgtgaag	ccaggtttac	attcaccaaa	2280
54	aggaggcatc	actgcagagc	atgtgggaag	gttttctgtg	cttcctgctg	tagcctgaaa	2340
55	tgtaaaactgt	tatacatgga	cagaaaggaa	gctagagtgt	gtgtaatctg	ccattcagtg	2400
56	ctaatagaatg	ctcaagcctg	ggagaacatg	atgagtgcct	caagccagag	ccctaaccct	2460
57	aacaatcctg	ctgaataactg	ttctactatc	cctcccttgc	agcaagctca	ggcctcagga	2520
58	gctctgagct	ctccacctcc	caactgtgatg	gtacctgtgg	gagttttaaa	gcaccctgga	2580
59	gcagaagtgg	ctcagcccag	agagcagagg	cgagtttggg	ttgctgatgg	gatcttgccc	2640
60	aatggagaag	ttgctgatgc	agccaaatta	acaatgaatg	gaacttcctc	tgcaggaacc	2700
61	ctggctgtgt	cacacgacct	agtcaagcca	gtaactacca	gtcctctacc	agcagagacg	2760
62	gatatttgtc	tattctctgg	gagtataact	caggttggaa	gtcctgttgg	aagtgcattg	2820
63	aatcttattc	ctgaagatgg	ccttcctccc	attctcatct	ccactgggtg	aaaaggagac	2880
64	tatgctgtgg	aagagaaaacc	atcacagatt	tcagtaatgc	agcagttgga	ggatgggtgg	2940
65	cctgaccac	ttgtatttgt	tttaaagtga	aatttgttgt	caatggttaa	aattgtaaat	3000
66	tatgtgaaca	ggaagtgtcg	gtgtttcaca	accaagggaa	tgcatgcagt	gggtcagctc	3060
67	gagatagtca	ttcttctaca	gtgtttaccg	gatgaaaagt	gtttgccaaa	ggatatcttt	3120
68	aatcactttg	tgcagcttta	tcgggatgtc	ctggcagggg	atgtggtgag	caacttgggg	3180
69	cattccttct	tcagtcaaa	tttccttggc	agtaaagaac	atgggtggatt	cttatatgtg	3240
70	acatctacct	accagtcact	gcaagacctc	gtactcccaa	ccccacctta	cttgtttggg	3300
71	attcttatcc	agaaatggga	aactccttgg	gctaaagtat	ttcctatccg	tctgatgttg	3360
72	agacttggag	ctgaatatcg	actttatcca	tgcccactat	tcagtgtcag	atttcgggaag	3420
73	ccattgtttg	gagagacggg	gcataccatc	atgaatcttc	ttgcagactt	cagaaattac	3480
74	cagtatacct	tgccagtagt	tcaaggtttg	gtggttgata	tggaagtctg	gaaaactagc	3540
75	atcaaaattc	ccagcaacag	atacaatgag	atgatgaaag	ccatgaacaa	gtccaatgag	3600
76	catgtcctgg	caggaggtgc	ctgcttcaat	gaaaaggcag	actctcatct	tgtgtgtgta	3660
77	cagaatgatg	atggaaacta	tcagaccag	gctatcagta	ttcacaatca	gcccagaaaa	3720
78	gtgactggtg	ccagtttctt	tgtgttcagt	ggcgtctga	aatcctcttc	tggatacctt	3780
79	gccaagtcca	gtattgtgga	agatggtgtt	atggtccaga	ttactgcaga	gaacatggat	3840
80	tccttgaggc	aggcactgcg	agagatgaag	gacttcacca	tcacctgtgg	gaaggcggac	3900
81	gcgagggaac	cccaggagca	catccacatc	cagtgggtgg	atgatgacaa	gaacgttagc	3960
82	aagggtgtcg	taagtccctat	agatgggaag	tccatggaga	ctataacaaa	tgtgaagata	4020
83	ttccatggat	cagaatataa	agcaaagtga	aaagtaatca	gatggacaga	ggtgtttttc	4080
84	ctagaaaacg	atgaccagca	caattgcctc	agtgatcctg	cagatcacag	tagattgact	4140
85	gagcatgttg	ccaaagcttt	ttgccttggc	ctctgtcctc	acctgaaact	tctgaaggaa	4200
86	gatggaatga	ccaaactggg	actacgtgtg	acacttgact	cagatcaggt	tggctatcaa	4260
87	gcaggagca	atggccagcc	ccttcctctg	cagtacatga	atgatctgga	tagcgccttg	4320
88	gtgccggtga	tccatggagg	ggcctgccag	cttagtgagg	gccccgttgt	catggaaactc	4380
89	atcttttata	ttctggaaaa	catcgtataa	acagagaaga	cttcattttt	ttctgttcag	4440
90	acttgtttga	acagcagtca	tacccaaatc	atttgcactt	taaaactgga	agattaagct	4500
91	tttgtttaaca	ctattaatgg	ggtggggaat	aggggtggag	tgggggtttg	ggagacgggt	4560
92	gggaaagggt	ggttgggggg	accgatgttc	cataattcta	agtcttctat	gcattgtcca	4620
93	ccaagaagat	ctgggcagct	tctgttcctg	cacaacagtt	atgctatcct	tgcagctaata	4680

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/744,167

DATE: 09/20/2002
 TIME: 14:09:24

Input Set : N:\paola\US09744167.raw
 Output Set: N:\CRF3\09202002\I744167.raw

```

94      ccccttctgt tactgttttag acaagaattc cgctcctctc tcaagattta cttatgggtca 4740
95      tgtgtcaga aatgctcaaa tgggtacaac catcaccaag ggtgggatgg gagggcagag 4800
96      gggaaataaa atataaagca tcaaaaaaaaa aaaaaaaaaa 4839
98 <210> SEQ ID NO: 2
99 <211> LENGTH: 1323
100 <212> TYPE: PRT
101 <213> ORGANISM: Homo sapiens
102 <400> SEQUENCE: 2
103      Met Trp Ile Asp Glu Asn Ala Val Ala Glu Asp Gln Leu Ile Lys Arg
104      1          5          10          15
105      Asn Tyr Ser Trp Asp Asp Gln Cys Ser Ala Val Glu Val Gly Glu Lys
106      20          25          30
107      Lys Cys Gly Asn Leu Ala Cys Leu Pro Asp Glu Lys Asn Val Leu Val
108      35          40          45
109      Val Ala Val Met His Asn Cys Asp Lys Arg Thr Leu Gln Asn Asp Leu
110      50          55          60
111      Gln Asp Cys Asn Asn Tyr Asn Ser Gln Ser Leu Met Asp Ala Phe Ser
112      65          70          75          80
113      Cys Ser Leu Asp Asn Glu Asn Arg Gln Thr Asp Gln Phe Ser Phe Ser
114      85          90          95
115      Ile Asn Glu Ser Thr Glu Lys Asp Met Asn Ser Glu Lys Gln Met Asp
116      100         105         110
117      Pro Leu Asn Arg Pro Lys Thr Glu Gly Arg Ser Val Asn His Leu Cys
118      115         120         125
119      Pro Thr Ser Ser Asp Ser Leu Ala Ser Val Cys Ser Pro Ser Gln Leu
120      130         135         140
121      Lys Asp Asp Gly Ser Ile Gly Arg Asp Pro Ser Met Ser Ala Ile Thr
122      145         150         155         160
123      Ser Leu Thr Val Asp Ser Val Ile Ser Ser Gln Gly Thr Asp Gly Cys
124      165         170         175
125      Pro Ala Val Lys Lys Gln Glu Asn Tyr Ile Pro Asp Glu Asp Leu Thr
126      180         185         190
127      Gly Lys Ile Ser Ser Pro Arg Thr Asp Leu Gly Ser Pro Asn Ser Phe
128      195         200         205
129      Ser His Met Ser Glu Gly Ile Leu Met Lys Lys Glu Pro Ala Glu Glu
130      210         215         220
131      Ser Thr Thr Glu Glu Ser Leu Arg Ser Gly Leu Pro Leu Leu Leu Lys
132      225         230         235         240
133      Pro Asp Met Pro Asn Gly Ser Gly Arg Asn Asn Asp Cys Glu Arg Cys
134      245         250         255
135      Ser Asp Cys Leu Val Pro Asn Glu Val Arg Ala Asp Glu Asn Glu Gly
136      260         265         270
137      Tyr Glu His Glu Glu Thr Leu Gly Thr Thr Glu Phe Leu Asn Met Thr
138      275         280         285
139      Glu His Phe Ser Glu Ser Gln Asp Met Thr Asn Trp Lys Leu Thr Lys
140      290         295         300
141      Leu Asn Glu Met Asn Asp Ser Gln Val Asn Glu Glu Lys Glu Lys Phe
142      305         310         315         320
143      Leu Gln Ile Ser Gln Pro Glu Asp Thr Asn Gly Asp Ser Gly Gly Gln

```

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/744,167

DATE: 09/20/2002
 TIME: 14:09:24

Input Set : N:\paola\US09744167.raw
 Output Set: N:\CRF3\09202002\I744167.raw

144				325				330				335		
145	Cys	Val	Gly	Leu	Ala	Asp	Ala	Gly	Leu	Asp	Leu	Lys	Gly	Thr
146				340				345				350		
147	Ser	Glu	Ser	Glu	Glu	Cys	Asp	Phe	Ser	Thr	Val	Ile	Asp	Thr
148				355				360				365		
149	Ala	Asn	Tyr	Leu	Ser	Asn	Gly	Cys	Asp	Ser	Tyr	Gly	Met	Gln
150				370			375					380		
151	Gly	Val	Ser	Phe	Val	Pro	Lys	Thr	Leu	Pro	Ser	Lys	Glu	Asp
152				385			390					395		400
153	Thr	Glu	Glu	Lys	Glu	Ile	Glu	Glu	Ser	Lys	Ser	Glu	Cys	Tyr
154				405				410				415		
155	Ile	Tyr	Glu	Gln	Arg	Gly	Asn	Glu	Ala	Thr	Glu	Gly	Ser	Gly
156				420				425				430		
157	Leu	Asn	Ser	Thr	Gly	Asp	Leu	Met	Lys	Lys	Asn	Tyr	Leu	His
158				435			440					445		
159	Cys	Ser	Gln	Val	Pro	Ser	Val	Leu	Gly	Gln	Ser	Ser	Pro	Lys
160				450			455					460		
161	Ala	Ser	Leu	Pro	Ser	Ile	Ser	Val	Pro	Phe	Gly	Gly	Ala	Arg
162				465			470				475			480
163	Gln	Pro	Ser	Asn	Leu	Lys	Leu	Gln	Ile	Pro	Lys	Pro	Leu	Ser
164				485				490				495		
165	Leu	Gln	Asn	Asp	Phe	Pro	Ala	Asn	Ser	Gly	Asn	Asn	Thr	Lys
166				500				505				510		
167	Asn	Asp	Ile	Leu	Gly	Lys	Ala	Lys	Leu	Gly	Glu	Asn	Ser	Ala
168				515				520				525		
169	Val	Cys	Ser	Pro	Ser	Leu	Gly	Asn	Ile	Ser	Asn	Val	Asp	Thr
170				530			535					540		
171	Glu	His	Leu	Glu	Ser	Tyr	Glu	Ala	Glu	Ile	Ser	Thr	Arg	Pro
172				545			550				555			560
173	Ala	Leu	Ala	Pro	Asp	Ser	Pro	Asp	Asn	Asp	Leu	Arg	Ala	Gly
174				565				570				575		
175	Gly	Ile	Ser	Ala	Arg	Lys	Pro	Phe	Thr	Thr	Leu	Gly	Glu	Val
176				580				585				590		
177	Val	Trp	Val	Pro	Asp	Ser	Gln	Ala	Pro	Asn	Cys	Met	Lys	Cys
178				595			600					605		
179	Arg	Phe	Thr	Phe	Thr	Lys	Arg	Arg	His	His	Cys	Arg	Ala	Cys
180				610			615				620			
181	Val	Phe	Cys	Ala	Ser	Cys	Cys	Ser	Leu	Lys	Cys	Lys	Leu	Leu
182				625			630				635			640
183	Asp	Arg	Lys	Glu	Ala	Arg	Val	Cys	Val	Ile	Cys	His	Ser	Val
184				645				650				655		
185	Asn	Ala	Gln	Ala	Trp	Glu	Asn	Met	Met	Ser	Ala	Ser	Ser	Gln
186				660				665				670		
187	Asn	Pro	Asn	Pro	Ala	Glu	Tyr	Cys	Ser	Thr	Ile	Pro	Pro	Leu
188				675			680				685			
189	Gln	Ala	Gln	Ala	Ser	Gly	Ala	Leu	Ser	Ser	Pro	Pro	Pro	Thr
190				690			695				700			
191	Val	Pro	Val	Gly	Val	Leu	Lys	His	Pro	Gly	Ala	Glu	Val	Ala
192				705			710				715			720

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/744,167

DATE: 09/20/2002
TIME: 14:09:24

Input Set : N:\paola\US09744167.raw
Output Set: N:\CRF3\09202002\I744167.raw

193	Arg	Glu	Gln	Arg	Arg	Val	Trp	Phe	Ala	Asp	Gly	Ile	Leu	Pro	Asn	Gly
194					725					730					735	
195	Glu	Val	Ala	Asp	Ala	Ala	Lys	Leu	Thr	Met	Asn	Gly	Thr	Ser	Ser	Ala
196				740					745					750		
197	Gly	Thr	Leu	Ala	Val	Ser	His	Asp	Pro	Val	Lys	Pro	Val	Thr	Thr	Ser
198			755					760					765			
199	Pro	Leu	Pro	Ala	Glu	Thr	Asp	Ile	Cys	Leu	Phe	Ser	Gly	Ser	Ile	Thr
200		770					775					780				
201	Gln	Val	Gly	Ser	Pro	Val	Gly	Ser	Ala	Met	Asn	Leu	Ile	Pro	Glu	Asp
202		785				790					795					800
203	Gly	Leu	Pro	Pro	Ile	Leu	Ile	Ser	Thr	Gly	Val	Lys	Gly	Asp	Tyr	Ala
204					805					810					815	
205	Val	Glu	Glu	Lys	Pro	Ser	Gln	Ile	Ser	Val	Met	Gln	Gln	Leu	Glu	Asp
206				820						825				830		
207	Gly	Gly	Pro	Asp	Pro	Leu	Val	Phe	Val	Leu	Asn	Ala	Asn	Leu	Leu	Ser
208			835					840					845			
209	Met	Val	Lys	Ile	Val	Asn	Tyr	Val	Asn	Arg	Lys	Cys	Trp	Cys	Phe	Thr
210		850					855					860				
211	Thr	Lys	Gly	Met	His	Ala	Val	Gly	Gln	Ser	Glu	Ile	Val	Ile	Leu	Leu
212		865				870					875					880
213	Gln	Cys	Leu	Pro	Asp	Glu	Lys	Cys	Leu	Pro	Lys	Asp	Ile	Phe	Asn	His
214					885					890					895	
215	Phe	Val	Gln	Leu	Tyr	Arg	Asp	Ala	Leu	Ala	Gly	Asn	Val	Val	Ser	Asn
216			900						905					910		
217	Leu	Gly	His	Ser	Phe	Phe	Ser	Gln	Ser	Phe	Leu	Gly	Ser	Lys	Glu	His
218			915					920					925			
219	Gly	Gly	Phe	Leu	Tyr	Val	Thr	Ser	Thr	Tyr	Gln	Ser	Leu	Gln	Asp	Leu
220		930					935					940				
221	Val	Leu	Pro	Thr	Pro	Pro	Tyr	Leu	Phe	Gly	Ile	Leu	Ile	Gln	Lys	Trp
222		945				950					955					960
223	Glu	Thr	Pro	Trp	Ala	Lys	Val	Phe	Pro	Ile	Arg	Leu	Met	Leu	Arg	Leu
224					965					970					975	
225	Gly	Ala	Glu	Tyr	Arg	Leu	Tyr	Pro	Cys	Pro	Leu	Phe	Ser	Val	Arg	Phe
226				980					985					990		
227	Arg	Lys	Pro	Leu	Phe	Gly	Glu	Thr	Gly	His	Thr	Ile	Met	Asn	Leu	Leu
228		995					1000						1005			
229	Ala	Asp	Phe	Arg	Asn	Tyr	Gln	Tyr	Thr	Leu	Pro	Val	Val	Gln	Gly	Leu
230		1010				1015						1020				
231	Val	Val	Asp	Met	Glu	Val	Arg	Lys	Thr	Ser	Ile	Lys	Ile	Pro	Ser	Asn
232		1025				1030					1035					1040
233	Arg	Tyr	Asn	Glu	Met	Met	Lys	Ala	Met	Asn	Lys	Ser	Asn	Glu	His	Val
234				1045						1050					1055	
235	Leu	Ala	Gly	Gly	Ala	Cys	Phe	Asn	Glu	Lys	Ala	Asp	Ser	His	Leu	Val
236			1060						1065					1070		
237	Cys	Val	Gln	Asn	Asp	Asp	Gly	Asn	Tyr	Gln	Thr	Gln	Ala	Ile	Ser	Ile
238			1075					1080					1085			
239	His	Asn	Gln	Pro	Arg	Lys	Val	Thr	Gly	Ala	Ser	Phe	Phe	Val	Phe	Ser
240		1090				1095						1100				
241	Gly	Ala	Leu	Lys	Ser	Ser	Ser	Gly	Tyr	Leu	Ala	Lys	Ser	Ser	Ile	Val

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/744,167

DATE: 09/20/2002

TIME: 14:09:25

Input Set : N:\paola\US09744167.raw

Output Set: N:\CRF3\09202002\I744167.raw